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ON LAWS INTENDED TO REGULATE THE PRACTICE OF PHARMACY IN THE UNITED STATES OF AMERICA.

BY CHARLES C. FREDIGKE.

When we examine the efforts made thus far to regulate the business of selling drugs in our country, we find that they emanate from a desire to raise that business to the dignity of a profession. It is worthy of note, that these efforts, instead of being brought forward by the people, in every instance proceed from those engaged in the business. They make the protection of the people a prime reason, culminating in graduation and registration; but the laws enacted in some of the States fail entirely of their intention and purpose, besides incumbering the business and imposing expenses on those engaged in it. They run counter in every instance to the civil rights of the citizen. They must do this of necessity so long as the Constitution of the United States of America is not amended so as to bring the practice of pharmacy within the concern of the Government at large. Under the present conditions, no government of any one of the States of this Union possesses the right to regulate the practice of pharmacy, except in so far as the welfare of the Commonwealth demands, which depends upon its polity, that is, its constitution—the fundamental framework upon which the various departments of a government are based; therefore the State can do this only in such a manner as not to interfere in the free pursuit of any avocation an individual may prefer, whether qualified or not. This is a fundamental right possessed by every citizen, and secured by the Constitution of the United States of America; it is as broad as the Union of these States, being one of those which made our country what it is. Nobody can be called upon here to show evidence how he came about his profession. His ability to practise it is the only evidence required. The question of qualification, the degree of ability, is no concern of the

Government at all, at least it has not been thus far, for this simple reason, that as soon as the Government requires qualification it must establish and maintain a governmental standard; it cannot acknowledge as such, by any process of circumvention, the private standard of an incorporated college, managed by private individuals and sustained by private means.

The State can, however, enforce laws to regulate the promiscuous huckstering of drugs, the manufacture and sale of quack nostrums, or the adulteration of articles of consumption, on the ground of public policy, that is to ensure the safety of the citizen, and on this only. It can make these laws so stringent as to practically stop the present huckstering of drugs and prevent the people from "doctoring" themselves. But professional qualification for the selling of such drugs, or the manufacturing of such quack nostrums, it cannot demand, much less enforce, for the reasons stated.

It will be seen then, that pharmacy, meaning a systematic knowledge of the art of preserving, preparing and compounding substances for the purposes of medicine, is not necessary in the business of selling drugs, is not required of the "druggist," pharmacy being no concern of the government at large. It exists in individual instances, but forming exceptions, as compared with the great majority of "dealers in drugs," is not worthy of consideration here, because we speak here of the business at large, in general, as it exists *de facto* in our country.

In order to prove and show more clearly what has been maintained, we will give an example:

"A bill for an act to regulate the practice of pharmacy and sale of poisons and to prevent adulterations of drugs and medicinal preparations in the State of Illinois," was introduced by Mr. Lee, ordered to a first reading, referred to Committee on Judiciary, and ordered printed March the 13th, 1874, at the last session of the General Assembly of the State of Illinois. This bill for an act is only, with a few additions and omissions, a counterfeit in imitation of the one at present in force as a law in Kentucky, that is, it is tolerated in that State, existing as it were by permission. We will assume this bill to be a law in Illinois, and what is said of it on the strength of this assumption applies equally to what is a fact in the State of Kentucky.

The bill consists of only one section and 13 paragraphs, including the first section and two schedules designated A and B.

Section one makes it unlawful for any person, unless a registered pharmacist, or a registered assistant in pharmacy, to retail, compound or dispense medicines or poisons.

§ 2. A person, in order to be registered, must be either a graduate, a practicing pharmacist or a practicing assistant in pharmacy.

§ 3, defines these several persons.

§ 4, creates a Board of Pharmacy, 12 candidates for membership of which office are proposed by the incorporated colleges of this State, from among whom the Governor appoints three to constitute said Board. Its duties are: to examine candidates, to supervise registration and to cause the prosecution of all persons violating its provisions.

§ 8. Any person not a registered pharmacist, keeping open shop, becomes guilty of a misdemeanor and liable to a penalty of no less than 50 nor more than 200 dollars, provided, however, that in rural districts where there is no registered pharmacist within two miles, it shall be lawful for retail dealers (in or of what is not mentioned) to procure licenses from the Board of Pharmacy, at a fee of one dollar, to sell the usual medicines and poisons.

It further provides, that nothing contained in this act shall apply to, or in any manner whatever interfere with, the business of a wholesale dealer in drugs and chemicals, nor with the making and dealing in proprietary remedies, popularly called patent medicines.

What has been quoted is the sum and substance, the essence by means of which this bill is going to meet the wants of the State and the profession. In its practical points it closely resembles all other laws thus far brought forward in any of the States. We will see now how it will operate as a law: After we have graduated, been examined and registered, and paid all the various licenses and fees, a retail dealer in a rural district, who may be dealing in hardware, dry goods or groceries, pays one dollar and then can sell any medicines or poisons, which ever he pleases! A wholesale dealer can sell and retail all the various drugs, medicines and poisons, which we are prohibited from selling, without paying anything whatever, without being registered and examined! After we have been examined and registered, and paid all the various licenses and fees, this law especially provides against interference with the manufacturer and dealer in quack-nostrums—he may go on swimmingly!

Where the much talked of protection to the people, the protection

to ourselves and the progress to pharmacy comes in, is difficult to see. But that is not all; for if that Board of Pharmacy gets judgment against a poor "dealer in drugs," in a police court or other retail court of justice, he will have to close his shop and sell his business. In this free country of ours, poverty ought not to be a bar to justice, for if that dealer possesses the means he will appeal the case to the Supreme Court of Illinois; or if a Kentuckian, to that of his State, and receiving an adverse decision there, he appeals it to the Supreme Court of the United States, where he will obtain a judgment that would stagger any Board of Pharmacy! It will then be his turn to bring an action at law against that Board of Pharmacy and those incorporated colleges for damages and costs caused him by their unconstitutional interference with his civil rights, and that Board would certainly ask, what are we going to do about it? They might peddle licenses for selling drugs and poisons to all the dealers in hardware, dry goods and groceries in the rural districts of Illinois, but that is out of the question, it is unconstitutional. That their power of registration and examination is practically equivalent to *nihil*, needs not to be mentioned.

All that any one of the States can do, is to enforce a most comprehensive law prohibiting the promiscuous sale of drugs, regulate the sale of poisons and the manufacture and sale of quack nostrums, popularly called patent medicines; it may also comprise the adulteration of drugs but in doing so must entirely abstract from professional qualification. Such an act might also include all those articles which under any circumstances or by accidents may become injurious or dangerous, on the ground, as has been said before, of public policy and for no other reasons.

If a State would create, maintain and enforce a system of medical and pharmaceutical supervision, there might be such a thing as pharmacy, but then it would have to establish a pharmacopœia, an official formulary, published according to its orders, containing all the medical and pharmacal preparations, which ought and can be kept on hand by the pharmacist. In securing the public health against the dangers of empiricism and the deceiving seductions of the charlatans, it would be at the same time a reliable guide to the practitioner, and to the administration a means to assure order and supervision. But the Pharmacopœia of the United States of America lacks all these essential particulars; the majority of druggists do not spend the cost

for the paper on which it is printed, know nothing definite about it, may or may not keep on hand whatever they please, and may or may not graduate the quality and strength of their drugs and preparations so as to stand in a suitable relation to the strength of their pockets; everything is left to the progressive ideas of the individual, and nobody can compel him to care at all about it. Pharmacy might be made more remunerative, and at the same time considerably elevated in the estimation of the people, by a close working union or national organization of the druggists of the United States of America, by such means for instance, as the establishment of a uniform tariff of prices in the prescription as well as retail trade, agreed to and conformed to by every member, said tariff to be altered monthly in accordance with the state of the market; but such an association depending on individual consent, is almost utopian, because it requires a certain degree of honesty, foreign to the spirit of unscrupulous competition possessed by the majority, which does not care to bind itself by rules, even if we succeed to convince it, by figuring them out in dollars and cents.

We are, therefore, no nearer to pharmacy than we were forty years ago, and the question will recur again and again: What are we going to do about it?

Chicago, April, 1874.

SOLUTION OF THE CITRATE OF MAGNESIUM.

BY CHARLES G. POLK, M. D.

I find in the Report of the Committee of the American Pharmaceutical Association a very pointed criticism, by Mr. Diehl, of Louisville, on a formula (published by me a short time before the publication of the last edition of the Pharmacopœia) in the *Druggists' Circular*, for a cheap citrate of magnesium. At the time of publication, the extremely high price of citric acid and the competition of trade, had really created a demand for a formula for an article that would answer the purpose, and yet be within the price the large mass of people could afford to pay. To meet that demand, the objectionable article was furnished.

The practical point at issue is whether one hundred and twenty grains of carbonate of magnesium, decomposed by two hundred and forty grains of citric acid, is sufficiently active to meet the wishes of those who take the citrate of magnesium.

My experience is, that most of the persons who take the solution are satisfied with one of that strength; and, really, nine times out of ten the customer is better off than he would have been had he taken a more powerful cathartic. It is a universal law of the animal economy that over-excitation is attended with a corresponding debility. Super-catharsis is almost ever attended with subsequent inaction of the intestinal canal and constipation, the only exception to this rule being those cases in which a degree of congestion is induced sufficient to maintain considerable serous and biliary secretion. The injury inflicted by the patent pills of Jayne, Morrison, etc., is very great; the physician, who alone has an intelligent view of these consequences, can only deplore, without the ability to correct or even modify, this evil. He can, however, when publishing a formula for a commercial article which the community demand and will have, give one so modified as to open the bowels when constipated in a gentle yet effective manner, without the corresponding debility the old officinal formula would induce on persons of susceptible bowels. And really this cathartic evil, like many others society must encounter, must be endured, and, if possible, modified, without a chance of being escaped. Super-catharsis is a weak point in regular practice, where homœopathy gains decided advantage; in fact, the leading men of the regular profession are now realizing this, and while shunning the charybdis on which the Hahnemannian is so often wrecked, also steer safe from the scylla on which the allopath was formerly unfortunate. While I do not denounce *in toto* active purgation when the derivative effect is required according to the direction of a physician, I cannot too strongly deprecate the use of active medicines in the hands of ignorant and uneducated persons. I am aware that it will be objected that this weak citrate will not move the bowels of some persons; I admit that—but are the masses to pay ten cents extra for a bottle in order to meet exceptional cases, the few with obdurate bowels? I cannot see the necessity of it. I know a drug store in this city that sells on an average thirty bottles a week made by my formula, and I am informed it is very seldom that a complaint is made. Mr. Diehl states that my formula is but half the officinal strength; if he intends the present officinal formula, he says 240 is but one-half of four hundred—a calculation somewhat at variance with my arithmetic. In filling physicians' prescriptions, the officinal directions should never be deviated from, unless specified by the prescriber; and as we have now

an excellent officinal formula, the officinal article should alone be sold under the officinal name, and if a modification from it be necessary, the fact should be stated on the label.

It should, however, be recollected that the Pharmacopœia is designed to meet the wants of the medical and pharmaceutical professions, and not to direct preparations for popular use, although it is far better to conform in every respect to its requirements, with specific directions for its use accompanying each bottle or package. The solution of tartrate of sodium would make a good cathartic for popular use, and, if once introduced and sold at its relative cost, no doubt it would, in a larger measure, supersede the more elegant and costly citrate. Phosphate of sodium, dissolved in eight times its weight of water and flavored with an aromatic syrup, forms a preparation therapeutically superior to either the magnesium citrate or the sodic tartrate, and but very little more disagreeable, acting as a stimulant to the functions of the chylopoetic viscera, and exciting the biliary secretion. The following is a good formula :

Ry. Sodii Phosph.,	.	.	.	℥i	
Aquæ,	.	.	.	℥viii	
Syrup. Acidi Citrici,	.	.	.	℥iss.	M.

Take at once.

Citrate of sodium could also be used as a pleasant cathartic. A solution is quite permanent, and is equally as agreeable as the magnesium citrate, but it presents no inducement in point of economy, and consequently offers no advantages that especially recommend it to our consideration over the present officinal formula for the latter.

In conclusion, I will add, the weaker solution by me furnished to the *Druggist's Circular* answers very well as a mild cathartic, as hundreds of cases to whom I had prescribed it evince, and as several druggists, were they disposed, could verify ; but that it was not designed to take the place of the officinal one is indicated by the accompanying formula for a solution of greater strength, recommended as its superior, and which furnishes a more agreeable preparation than I have ever seen furnished by any other formula, but the deficiency in acid impairs its permanence. Stability, however, has never been attained by any formula yet adopted ; previous to the publication of the Pharmacopœia, I was working out a formula by which the magnesium solution would be held more entirely in solution by the

addition of a drachm of potassic citrate to each bottle, and I had quite well succeeded.

I cannot deprecate too severely the sale of Epsom salt, disguised and called "Citrate of Magnesia," although it is a "trick of trade" entirely too common everywhere—even our own city, the cradle of American pharmacy, is not exempt.

Philadelphia, April, 1874.

NOTE BY THE EDITOR.—We do *not* agree with Dr. Polk that the practical point at issue in the above question is whether the citrate of magnesium of the strength given in his formula is sufficiently active for most persons; but whether an article, containing only three-fifths (which is not much over one-half) of the officinal quantity, should be sold under the officinal name. The fact that it meets with a satisfactory sale at one Philadelphia drug store does not remove the objection; but we should like to inquire about this apothecary, who adheres so conscientiously to the Pharmacopœia that he offers to his customers an article forty per cent. less in strength than the officinal, whether he requires of them also (bottle excluded) forty per cent. less money than his neighbor must demand who follows the officinal directions? Dr. Polk's excellent arguments are for the Pharmacopœia Committee to determine, whether the strength of the solution should be reduced; but not for the apothecary to decide this question, even though recommended by a score of physicians. If twelve ounces of the officinal solution is too large a dose, it would be better to introduce again bottles of one-half or two-thirds of that size.

We have heard it repeatedly charged that Epsom salt is *frequently* sold as citrate of magnesium, yet ever since the introduction of this solution in this country we remember but *one* positive proof, and that was furnished in a paper by Prof. G. F. H. Markoe, published in the Proceedings of the American Pharmaceutical Association, 1871, p. 532—538.

NOTE ON SULPHURIC ACID, U. S. P.

By W. H. PILE, M. D.

Read at the Pharmaceutical Meeting, April 21st.

This acid, according to the present and previous Pharmacopœias, should be of specific gravity 1.843. As remarked by Dr. Squibb several years ago and repeated at the late meeting of the American

Pharmaceutical Association, it is impossible to procure sulphuric acid of this density. Upon actual trial with recently made acid, none was found to be over 1.835 at 60° F. The question has arisen, why give the officinal gravity of an acid, which druggists cannot make for themselves, at a higher density than the manufacturing chemists can furnish?

I suggest as a reason for this, that the manufacturers of sulphuric acid always advertise and sell their acid as being of a standard density of 66° B., and the framers of the Pharmacopœia, knowing this to be so, gave the corresponding specific gravity at 1.843, that being the usual number given in many chemical works as equivalent to 66° B. At any rate I am quite certain that if the specific gravity of the acid, so called 66°, had been experimentally taken it would have proved to be only 1.835. It is just here that a source of trouble arises. Any one upon examination of the tables appended to various chemical works, will be struck with the discrepancy which occurs in giving the specific gravity of Beaumé's hydrometer—England, France, Germany, each have a different scale. In this state of uncertainty one of our fellow-members, Wm. H. Pemberton, in 1851 selected a scale on this very account, namely, that the strongest sulphuric acid which manufacturers could readily make had a gravity of not over 1.835; calling this gravity 66° B., all the remaining degrees were readily calculated. From this scale, which will be found in the U. S. Dispensatory, I have always graduated my hydrometers, and have for 23 years and over supplied nearly all the acid works of our country, thus fixing the density of sulphuric acid at 66° B., equal to 1.835 specific gravity, and which density should certainly be that of the officinal sulphuric acid.

A PROPOSITION TO ABANDON THE PRESENT FORM OF
HYDROCYANIC ACID AS A MEDICINE.

By G. A. ZWICK.

In the February number, page 69, of the *American Journal of Pharmacy*, a series of examinations are reported on the strength of hydrocyanic acid as met with in commerce. The results of Mr. Towerzey's experiments prove what always has been surmised; in fact any one dispensing hydrocyanic acid must have observed that the acid becomes steadily weaker at each successive occasion to use it, even though not actually decomposed.

Of all the samples tested not one proved of standard strength; even No. 1, from a first class house, was below two per cent. This failing should be considered, in connection with the uncertainty of the drop-dose, in this case a matter of the utmost importance, and too often lost sight of. The vials in which hydrocyanic acid usually comes have thick necks and often no lip at all, and are about as awkward for dropping as they could be made; this reminds of a label which I could never comprehend clearly; it reads: "Hydrocyanic acid, minimum dose, one drop." How a minimum dose could be limited, considering the infinitesimals of Homœopathy, can scarcely be imagined.

Would it not be preferable to state the maximum dose, or, if this be not desirable, call it the *dilute* hydrocyanic acid of the U. S. P., or say simply that the contents are the two per cent. acid. But if all these objection had been removed, and the most scrupulous accuracy observed by the manufacturer, the most essential point, *i. e.*, the stability of the preparation, is not assured, nor is it even claimed by any of the modes of preparation or preservation; there is then but one alternative left, which is, in fact, pointed out by the Dispensatory. It is noted that the more concentrated the hydrocyanic acid, the more it is inclined to chemical changes. Here then would be a way out of this dilemma, *viz.*, to exhibit this medicine in a more dilute form. To do this and not multiply preparations would be very feasible, and I should think very satisfactory to physicians. This course has been adopted in the latest German Pharmacopœia (*vide* Deutsche Reichs Pharmacopœe) in which hydrocyanic acid, as such, has been dismissed, and the "Aqua amygdalarum amararum concentratum" directed to contain one-tenth of one per cent. of anhydrous hydrocyanic acid. This being then just one-twentieth the strength of our officinal dilute two per cent. acid, a proportion at once convenient and admitting of positive measurement, one scruple contains one minim of our present officinal acid, and in this condition it is yet sufficiently strong for all practical purposes. It may be contended that bitter almond water is also prone to change, which to some extent is true, but if kept in a dark bottle and in a dark place it will certainly keep for six months, and I know of one sample that retained its full strength for one year.

Our present bitter almond water made with the essential oil, as well as the hydrocyanic acid, would then be displaced by a valuable and reliable preparation, for if the oil of bitter almonds possess any medicinal virtue, the carbonate of magnesium will be pretty certain to remove it.

By referring to page 204 of the April number, I find a plan for keeping hydrocyanic acid, which need only be tried to be condemned: mercury at one end, with vulcanized rubber at the other, and the elements of ammonia in the middle, will require a very short time to develop a fine odor of hydro-sulphuret of ammonia. This was proven to me some years ago, a Boston firm having put this acid up in blue one ounce bottles with vulcanized rubber stoppers. The style was splendid, but the contents of the bottle would never be mistaken for hydrocyanic acid.

Covington, Ky., April 15, 1874.

NOTES ON SUGAR-COATED QUINIA PILLS.

BY A. B. LYONS, M. D., DETROIT, MICH.

At the request of a physician I recently made an examination of some samples of sugar-coated quinia pills, which are offered for sale in this city. The principal objects sought in the investigation were three, viz: 1st, to ascertain whether the pills contained the full amount of quinia claimed on the labels. 2d, to determine to what extent other alkaloids of bark are substituted for quinia in their manufacture. 3d, to arrive at some simple plan for estimating approximately the quantity of quinia they contain.

The pills examined were from five prominent manufacturing houses, which are designated in this paper simply by numbers. The results as tabulated below, show that such an investigation was not uncalled-for. Physicians who prescribe quinia in the form of sugar-coated pills can no longer wonder at the uncertainty of the effects obtained therefrom.

The method pursued in the research was a simple one. The pills were digested in a little water, acidulated with hydrochloric acid, until completely dissolved or disintegrated. Caustic potash was then added in excess, and the mixture was repeatedly shaken with ether to dissolve out the precipitated alkaloids. The residue from the evaporation of this ethereal solution, after drying in a hot air-bath, was accurately weighed, and thus the total amount of alkaloid soluble in ether was determined.

If the quinine were tolerably pure, ether would extract the alkaloid perfectly, and the solution would exhibit no tendency to crystallize, and would leave, on evaporation, an easily fusible residue of a gummy

or resinous appearance. Cinchonia, being nearly insoluble in ether, would remain suspended in the aqueous solution. Quinidia and cinchonidia would be dissolved only with difficulty by the ether, separating from the solution on slow evaporation, or even without evaporation, in distinct crystals.

Judged by the behavior of the ethereal solution, samples 1 and 2 were tolerably free from admixture of the cheaper alkaloids, a trifling amount of cinchonia alone showing itself. In No. 3, a large quantity of ether was required to dissolve the alkaloid, which was in part thrown down during the evaporation as an amorphous precipitate. Its characters did not in fact correspond exactly with those of any of the common bark alkaloids, but were, perhaps, such as might be exhibited by quinia after the action of excessive heat. No. 4 contained no alkaloid except quinia. No. 5 contained a very large proportion of the less soluble alkaloids. The ethereal solution crystallized freely, even without evaporation. The pills themselves were of a dark color, and, even after extraction with ether, the alkaloids yielded, on treatment with dilute sulphuric acid, a strongly colored solution. Evidently the "quinine" employed was an extremely crude article. These pills also, alone out of the five samples examined, contained an excess of acid.

In a second series of experiments, made by way of confirming the results already obtained, the amount of quinia was estimated from the sulphuric acid contained in the pills. Since sulphuric acid is easily estimated by a volumetric process, this method might be employed by those who have not the appliances for making gravimetric analyses. (Ten grains of quinia sulphate requires for precipitation 2.814 grs. of barium chloride.) For obvious reasons, however, this plan cannot be recommended as affording by itself any reliable information in regard to the amount of quinine present.

The sparing solubility of the neutral sulphate of quinia, and the facility with which it crystallizes from a solution in hot water, suggests a simple method of determining whether the pills contain the full amount of quinine claimed by the label. If two grains of quinine be dissolved in six fluidrachms of hot water, crystals form sparingly in the fluid within a few hours after cooling. With a smaller quantity of water the crystallization is, of course, more rapid and abundant. I found that two grain pills from samples 1 and 2 yielded crystals when dissolved in five and a half fluidrachms of water. No. 3 crystallized

only sparingly from a solution in one fluidrachm, and that in short massive crystals, totally unlike the delicate fibres and needles of genuine quinia. No. 4 crystallized very sparingly from three fluidrachms. No. 5 from two and a half, after the excess of acid had been carefully neutralized with dilute water of ammonia.

It will be seen, by inspecting the table, that these results harmonize, except in the case of No. 3, with those obtained by actual analysis. I can hardly think that anything likely to be used as an excipient can interfere with the success of this test, which is moreover so simple that it can be applied by those who make no pretensions to skill in chemical manipulation. The test may be applied practically thus: Dissolve a two grain pill in a fluidrachm of water, by boiling in a test tube. On cooling, the fluid should set into a dense network of fibrous crystals. Add a fluidrachm of water, or a larger quantity, if the first crystallization has been satisfactory, and heat till the crystals redissolve. In this way proceed until crystals form in the solution only sparingly after cooling. The volume of fluid, in drachms, multiplied by 100, and divided by six, will give now, approximately, the percentage amount of true quinine in the pill.

The annexed table exhibits the results of my experiments, and requires, perhaps, no further explanation or comment:

	Gross weight of 2 gr. pill.	Alkaloids solu- ble in ether, from five 2gr. pills.	Sulphate of quinia from five 2gr. pills.	One 2gr. pill crystallizes from water.
No. 1	4.8 grs.	7.15 grs.	9.55 grs.	5.5 drachms.
No. 2	4.7 "	7.1 "	9.5 "	5.5 "
No. 3	3.8 "	5.55 "	7.4 "	1. "
No. 4	3.7 "	4.65 "	6.2 "	3. "
No. 5	4. "	5.7 "	4.3 "	2.5 "

HELENIUM AUTUMNALE.

By FRANCIS J. KOCH, G. P.

From an Inaugural Essay.

This plant, belonging to the natural order Compositæ, is a perennial plant, indigenous to this country, growing more abundantly in the

Southern and Southwestern States. It has a very bitter taste, and is recommended by some in intermittent fever.

PROCESS PURSUED IN THE ANALYSIS OF THE PLANT.

Treatment with Ether.—A small quantity of the air dry plant was pulverized moderately fine, and macerated with stronger ether for four days; at the expiration of this time the temperature was raised to $+110^{\circ}$ F. for a short time, and then the substance was allowed to macerate for two days longer at the former temperature. The whole was then transferred to a percolator, and, after the liquid portion had run through, the dregs were entirely exhausted with stronger ether. The ethereal solution, which was of a dark-green color, with a blood-red hue in reflected light, had an acid reaction and a very bitter taste. It was allowed to evaporate spontaneously, lastly assisted by a gentle heat over a water bath. A small quantity of distilled water was added, and the heat continued until the whole was entirely free from ethereal and alcoholic odor, and then allowed to cool. The supernatant liquid was poured off, and the undissolved resinous substance repeatedly washed with small quantities of distilled water. The liquid and washings were concentrated to about one-third their bulk and set aside to clear.

The resinous substance undissolved by the water was then freed from adhering moisture by a gentle heat over a water bath. It had a dark-green color, a soft consistence and a bitter taste. (The bitter taste was subsequently found to be due to the insufficient exhaustion of the ethereal extract with water, the bitter principle being entirely soluble in water.) It was then warmed with a small quantity of 70 per cent. alcohol, and allowed to digest; the dissolved portion was then poured off, the residue washed repeatedly with 70 per cent. alcohol; the washings and solution evaporated to dryness left a resinous substance, of a light-brown color and a bitter taste, thereby proving the bitter principle to be soluble also in alcohol. The following solvents were applied to the resinous substance obtained with the 70 per cent. alcohol: H_2SO_4 dissolved it entirely, the solution being light-brown; on diluting with water it was changed to a beautiful rose color, and on further dilution the color disappeared with the production of a gray flocculent precipitate. Solution of KHO dissolved it, the hot solution more readily. NH_4HO and HNO_3 dissolved it partially. In HCl and CS_2 it was insoluble. In chloroform and benzin it was only slightly soluble.

A small quantity of the resinous substance was next subjected to the test for a glucoside. It was heated for fifteen minutes with diluted H_2SO_4 (one part of acid to ten parts of water), then rendered alkaline by the addition of solution of NaHO , and a few drops of alkaline solution of CuSO_4 added, and the whole heated to the boiling point, whereby a precipitate of Cu_2O was formed, proving the presence of glucose.

The substance undissolved by the 70 per cent. alcohol was next treated with hot 90 per cent. alcohol, which dissolved it almost entirely, leaving only slight traces of fat. The alcohol, upon cooling, deposited all it had taken up, which consisted of wax, chlorophyll, and other coloring matter; the deposit, after thoroughly washing with alcohol of the same strength, and then drying, was of a soft consistence, having a grayish-green color and a bland taste.

The aqueous solution of the ethereal extract, which had been set aside to clear, was separated from a slight resinous deposit, concentrated, filtered and set aside to crystallize. At the expiration of two days, no crystals having been formed in the liquid during this time, it was treated with the following reagents: NH_4HO produced no change except deepening the color of the liquid. NH_4HCO_3 had the same effect. CaCl_2 produced no change. Fe_2Cl_6 produced a black coloration. Gelatin caused a turbidity. Neither $\text{Pb}_2\text{C}_2\text{H}_3\text{O}_2$, nor tannic acid effected a change in the liquid.

Treatment with Alcohol.—The dregs, after having been exhausted with stronger ether, were freed from all traces of ether by exposure to the air, and then digested in 95 per cent. alcohol for three days, at a temperature of $+150^\circ \text{F.}$, and then allowed to macerate for one day longer at an ordinary temperature, the whole thrown into a percolator, and the dregs thoroughly exhausted with alcohol of the same strength; the washings added to the percolate, and the whole evaporated over a water bath. The resulting extract was treated with a small quantity of distilled water at a gentle heat, the whole allowed to cool, after which the solution was filtered off, the residue thoroughly washed with distilled water, the washings added to the solution, and the whole concentrated to one-half its bulk, and set aside in a cool place. The liquid was slightly bitter, having a faint acid reaction and a light-brown color.

The portion of the alcoholic extract insoluble in water was dried and again dissolved in alcohol, treated with animal charcoal, filtered and evaporated. The resulting resin was of a dark-brown color, and

entirely tasteless. It was soluble in CS_2 , less soluble in chloroform, insoluble in oil of turpentine, benzin and HNO_3 . The quantity obtained, being very small, allowed of no further experiments.

The aqueous solution of the alcoholic extract, which had been concentrated and set aside to crystallize, no crystals having been formed in two days, was subjected to the following reagents: NH_4HO , KHO and Na_2CO_3 deepened the color of the liquid, producing no further change. $CaCl_2$ produced a copious yellowish white precipitate, soluble in $HC_2H_3O_2$, rendering the presence of H_3PO_4 probable. Fe_2Cl_3 produced a black coloration and a slight black precipitate; the black color did not disappear on the application of heat. Gelatin produced a turbidity, thereby confirming the presence of tannic acid, although in a small proportion, as no astringency was perceptible in the plant, nor in any of the extracts thus far obtained from it. $Pb_2C_2H_3O_2$ produced a dense precipitate, entirely soluble in $HC_2H_3O_2$, thereby proving the absence of H_3PO_4 , the presence of which had been rendered probable by the precipitate, soluble in $HC_2H_3O_2$, which had been obtained on the addition of $CaCl_2$ to the solution.

On application of Trommer's test for glucose, a precipitate of Cu_2O was formed. To convince myself in another manner of the presence of glucose, a decoction was made from a small quantity of the herb, the decoction treated with $Pb_2C_2H_3O_2$, the resulting lead compounds separated from the liquid by filtering, the excess of lead removed from the filtrate by H_2S and filtering, the excess of H_2S expelled by boiling and filtering; the resulting clear yellow filtrate was evaporated to a syrupy liquid, which had a decidedly sweet taste, and on further evaporation and heating it gave off the peculiar odor and possessed the taste of caramel.

The remainder of the aqueous solution of the alcoholic extract was then treated with $Pb_2C_2H_3O_2$, the precipitate collected on a filter and washed; the filtrate and washings were neutralized with NH_4HO , whereby only a very slight turbidity was produced.

The $Pb_2C_2H_3O_2$ precipitate was treated with boiling water and filtered, the filtrate concentrated to a small bulk, and allowed to stand in a cool place to crystallize. After standing twenty-four hours, a small quantity of crystals of malate of lead were obtained.

The portion of the $Pb_2C_2H_3O_2$ precipitate, insoluble in boiling water, was dissolved in dilute $HC_2H_3O_2$, then neutralized with NH_4HO , whereby a precipitate was formed, which was washed, suspended in

alcohol, and treated with H_2S , filtered, and then evaporated, which left a yellowish coating, which, on solution and application of Fe_2Cl_6 and gelatin, proved to be tannic acid.

Treatment with Cold Water.—The substance, after having been exhausted with alcohol, was dried and then macerated with cold water, in a cool place, for six days, and strained, which yielded a turbid liquid of a light-brown color, tasteless, and neutral to litmus. On standing, a small quantity of inulin was deposited. The clear liquid was poured from the sediment, and heated to the boiling point, whereby a considerable amount of albumen was separated, which was filtered off, and the filtrate evaporated to one-half its bulk, after which the following reagents were applied :

NH_4HO and Na_2CO_3 deepened the color of the solution. Fe_2Cl_6 produced no change. $Pb_2C_2H_3O_2$ produced a slight flocculent precipitate, soluble in $HC_2H_3O_2$, which was afterwards proven to be coloring matter. Trommer's test for glucose showed its absence in this solution.

Treatment with Boiling Water.—The substance, after having been exhausted with cold water, was next treated with boiling water for one hour, then strained and concentrated to a small bulk, and subjected to the following reagents :

NH_4HO , Na_2CO_3 , KHO , $CaCl_2$, Fe_2Cl_6 and tannic acid produced no change in the liquid, except that the color was deepened by the alkalis. $Pb_2C_2H_3O_2$ produced a copious brown precipitate.

The whole of the liquid was then treated with $Pb_2C_2H_3O_2$, and the precipitate separated by a filter and washed. The filtrate and washings were neutralized with NH_4HO , producing a slight yellowish-white precipitate, which was filtered off and the filtrate treated with $Pb_2O_2C_2H_3O_2$ without producing any further change.

The $Pb_2C_2H_3O_2$ precipitate was then treated with boiling water, filtered, and the filtrate evaporated, which left a small crystalline residue, an organic acid in combination with lead, apparently malic acid.

The portion of the $Pb_2C_2H_3O_2$ precipitate insoluble in boiling water was digested in diluted $HC_2H_3O_2$ and filtered, the filtrate treated with NH_4HO , which produced no precipitate, showing that nothing had been dissolved by the acid. The precipitate was then boiled with a solution of $NaHO$ and filtered, the filtrate tested with solution of Ca_2HO for oxalic acid, giving a negative result.

The slight yellowish-white precipitate, obtained by treating the filtrate resulting from the precipitation of the decoction by $\text{Pb2C}_2\text{H}_3\text{O}_6$, and filtering, was suspended in alcohol and treated with H_2S and filtered; after removing the excess of H_2S and evaporating, no residue was left. The original precipitate apparently consisted of gum in combination with lead, and which evidently did not pre-exist in the plant as gum, but as inulin, which, by boiling, was converted into gum.

A larger quantity of the herb was subjected to distillation with water, and yielded a perfectly clear and transparent distillate, neutral to test paper, tasteless, and possessing but a very faint odor, thereby proving the absence of volatile acids and bases, and the presence of a very minute quantity of volatile oil.

The decoction remaining in the still was of a dark-brown color, having a very bitter taste and an acid reaction. It was evaporated to a solid extract, over a water bath, and treated with alcohol, which took up the whole of the bitter principle, leaving a brown extract-like mass, consisting of gum, fat, coloring matter, &c.

The alcoholic solution was evaporated to a solid extract, over a water bath, and a portion treated, in several small portions, with NH_4HO , KHO , Na_2CO_3 , and KHCO_3 , with a view of obtaining a crystallizable salt, but without success.

The remainder of the extract was boiled with diluted H_2SO_4 (one part of acid to ten parts of water) for fifteen minutes, the acid solution neutralized with BaCO_3 , the BaSO_4 removed, and the clear liquid tested for glucose by Trommer's test, which produced the characteristic precipitate of Cu_2O . The portion left behind by the diluted acid was of a liver-brown color, pulverizable, yielding a light-brown powder, of an exceedingly bitter taste, producing violent irritation and sneezing when drawn up into the nostrils.

It is supposed by some that the plant possesses poisonous properties. Whether or not the bitter, amorphous substance which I obtained from the plant possesses such properties I did not undertake to determine.

From the results of the above experiments, it seems that the bitter principle is a glucoside, soluble in ether, alcohol and water, freely in the first two menstrua, and boiling water dissolving it more readily than cold water; and by application of diluted H_2SO_4 , with heat, splitting up into glucose and an uncrystallizable, bitter amorphous substance, having an acid reaction. The herb contains also some

malic acid, traces of tannic acid, inulin, albumen, traces of fat and volatile oil, resin, chlorophyll, and other coloring matter.

A small quantity of the herb was incinerated, and found to contain sulphate, chloride and carbonate of iron, calcium, magnesium and potassium.

RESINA PODOPHYLLI.

By FREDERICK B. POWER, G. P.

From an Inaugural Essay.

Eight troy ounces of powdered podophyllum were treated as per formula for *resina podophylli*, U. S. P., 1870, until the alcoholic percolate ceased to cause a precipitate when dropped into water, and passed perfectly colorless; the residue contained in the percolator was dried and found to weigh seven troy ounces and two drachms, the amount of moisture in the powder having been previously ascertained and found to be 5 per cent., leaving the amount of soluble matter abstracted by the alcoholic menstruum about 4 per cent.

The precipitated resin was allowed to drain, and washed with successive portions of cold water until freed from acid, and the washings upon evaporation left no residue; the yield of resin thus obtained after careful drying was two drachms or three per cent.; it was of a light yellowish brown color, and presented a marked contrast with some of the commercial specimens examined. The percentage of resin seeming small, a larger quantity of selected rhizomes was operated upon, but the percentage in both instances was the same; the rhizomes, however, had been previously deprived of the radicles, and it being known that these are at least quite as rich in resin, the operation might have led to different results had they not been detached.

The mother liquor remaining after the precipitation of the resin, together with the washings therefrom, was concentrated by evaporation, when a portion of resinous matter separated, which was found to be entirely soluble in alcohol, being precipitated by water; but by

treatment with ether, was divided into two portions, soluble and insoluble, therein maintaining about the same degree of solubility as the precipitated resin. The exact amount of this substance was not ascertained, but must be at least ten per cent. of that originally obtained by precipitation. The portion of alcoholic resin insoluble in ether thus separated by the concentration of the mother liquor, was taken in doses of five grains, producing only a slight cathartic action, attended by no unpleasant effects, while the ethereal resin taken in the same amount proved to be an active emeto-cathartic, very violent in its action, producing vomiting and purging, attended with severe griping, sense of dryness in the throat and dilation of the pupils, the effects lasting for about twenty-four hours; the latter effect I have never seen recorded, and may possibly only be produced by an excessive dose; but it was plainly marked in this instance, affording conclusive evidence that the substance thus separated is identical with the precipitated resin, at the same time establishing the fact that *the so-called resin of podophyllum is not a true resin*, which term, as applied by the older chemists in its widest sense, distinguishes those substances insoluble in water, generally soluble in alcohol, for the most part uncrystallizable, and melting when warmed; it might with some degree of propriety be called a resinoid, from its resemblance to a resin, but this in turn is so vague in its meaning, that the nomenclature adopted by our Pharmacopœia may be more conveniently used until its true composition is more definitely determined.

The concentrated mother liquor when filtered was of a yellowish red color, possessing a slight bitter taste and strong acid reaction; no precipitate was produced by iodohydrargyrate of potassium, tannic acid, mercuric chloride or tincture of iodine, indicating the absence of any organic alkali; the statement of berberina having been separated from this liquid must have been applied with reference to the former officinal resin, precipitated without the agency of hydrochloric acid, as in the present process it was found to have been entirely precipitated.

The liquid, however, when quite dilute, frothed strongly upon agitation; the color was rendered much brighter upon the addition of alkalis. Ferric chloride colored it olive green, baryta water produced a dense precipitate, but it was not precipitated by a solution of gelatin; when mixed with anhydrous alcohol, a perfect solution was formed, which however did not froth; added to an alkaline solution

of cupric oxide, it became of a bluish green color, forming upon standing, a slight flocculent precipitate, which upon boiling turned to reddish brown. The liquid, when freed as much as possible of coloring matter by ether, was precipitated by barium hydrate, the precipitate collected and washed with a solution of the same, dissolved in a small portion of water and the barium removed by CO_2 , the resulting solution upon evaporation possessed the peculiar odor of saponin, tending to confirm the statement of Professor Mayer as to the presence of this substance, to which is no doubt partially due the extremely irritating effect upon the eyes and skin, experienced by those engaged in the manufacture of the resin on a large scale.

The residue contained in the percolator, after exhaustion by alcohol, was macerated with cold water for five days, filtered and evaporated to the consistence of an extract, possessing a sweetish odor, in color and taste closely resembling the English extract of taraxacum. This was taken in doses of from ten to twenty grains, producing only slightly laxative but decided tonic effects. Although proving that the rhizome after exhaustion by alcohol is almost entirely destitute of cathartic properties, yet the extract thus obtained may, upon trial, merit some application.

This extract was again liquified and treated with purified animal charcoal, which nearly deprived it of color; the solution gave a dense precipitate upon the addition of alcohol, which, when separated, by treatment with ferric chloride and solution of borax, was found to consist principally of gum. The solution, after the removal of the gum, contained extractive matter with some sugar; the latter, after separation by ether, was indicated by Trommer's test, and upon evaporating the solution and heating the odor of caramel was evolved. The charcoal was then exhausted with boiling alcohol; this liquid, however, upon evaporation, left but a slight amorphous residue.

Upon the officinal resin, as previously obtained, sulphuric and hydrochloric acids produce no change of color in the cold; nitric acid colors it deep reddish brown; when heated with concentrated sulphuric acid it is partially dissolved, forming at first a yellowish solution, which soon changes to a deep blood red, and upon dilution with water, separates flocks of a brownish red color. The portion undissolved by the concentrated acid is dissolved by alcohol with the formation of the same blood red color. The resin, when boiled with diluted sulphuric acid, is also partially dissolved, forming a red solu-

tion, though more slowly, and the filtered liquid is not capable of reducing cupric oxide in alkaline solution.

The resin fuses at 220° F., which was ascertained by placing a portion upon the surface of mercury, with a thermometer immersed in the liquid, and applying a carefully regulated heat; when heated on platinum foil it melts to a brownish liquid, and upon increasing the heat, takes fire and burns with a bright sooty flame with considerable empyreuma, leaving light porous charcoal. Two grams of the resin were boiled with a fluidounce of water, imparting thereto a light yellow color, while the resin ran together, forming a soft brownish mass, becoming brittle on cooling. The liquid was filtered while hot, by means of an arrangement for hot filtration, it was transparent while hot, but became turbid upon cooling, and upon evaporation of the liquid, separated resinous flocks. Upon weighing the resin after this treatment it was found to have lost 0.03 grams. The ethereal resin yielded similar results.

The resin is entirely soluble in amylic and methylic alcohol, acetone, officinal solution of potassa, forming, when diluted, a bright yellow solution; it is also soluble in carbolic acid, with which it seems to combine, depositing, upon evaporation, reddish yellow crystals, but is insoluble in turpentine.

Supported by a series of experiments made with the alcoholic and ethereal portions of this resin, I can confirm the statements that have been previously made, that while the portion of resin insoluble in ether is not without some activity, the ethereal resin is very much more active, and is to be preferred for medicinal use.

By the following tabular statement, the relative value of the official resin, as compared with some commercial varieties, will be seen based upon the relative activity of the ethereal and alcoholic resin; all were found to be free from admixture, and with one exception were found to be superior to many specimens of western manufacture; the difference in color is probably due to various modifications in the process of preparation, by the application of heat in the separation of the resin, which no longer becomes necessary with the use of hydrochloric acid, or by the addition of a greater or less amount of muriate of berberina.

No. 1. U. S. Pharmacopœia, 1870; light yellowish brown. No. 2. B. A. Hance, Philadelphia: bright yellow. No. 3. Manufacturer unknown: dark brown. No. 4. B. Keith & Co., N. Y.: yellowish

brown. No. 5. Charles Ellis, Son & Co., Philadelphia: bright yellow. No. 6. Tilden & Co., New Lebanon, N. Y.: bright yellow.

Action of Solvents upon five grams of Resin.

	1	2	3	4	5	6
Soluble in Turpentine,	Insoluble	Insoluble	Insoluble	Insoluble	Insoluble	Insoluble
" " Ether,	4.6	3.95	2.95	3.55	4.2	4.3
" " Chloroform,	0.02	0.01	0.01	0.015	0.005	0.02
" " Carb. Bisulph.	—	—	—	—	—	—
" " Petrol. Benzin	—	—	—	—	—	—
" " Official solu- tion Potassa re-pre- cipitated by HCl in excess,	0.17	0.77	1.65	1.2	0.52	0.51
Loss,	0.21	0.27	0.39	0.235	0.275	0.17
	5	5	5	5	5	5

Solubility of two grams of Ethereal Resin.

	1	2	3	4	5	6
Soluble in Chloroform,	1.4	1.25	1.6	1.32	1.15	1.2
" " Carbon Bisulphide, .	—	—	—	—	—	—
" " Petroleum Benzin, .	—	—	—	—	—	—
" " Ether or Alcohol, .	0.45	0.55	0.3	0.45	0.70	0.6
Loss,	0.15	0.20	0.1	0.23	0.15	0.2
	2	2	2	2	2	2

Some experiments were made with a view of isolating the white alkaloid, stated some time since by Professor Mayer to be contained in that portion of the former official resin which is insoluble in ether, but by the present process, should its hydrochlorate be soluble in water, it should have been present in the mother liquor, remaining after the precipitation of the resin, but was not there detected.

REMARKS ON RESIN OF PODOPHYLLUM.

By J. M. MAISCH.

Five or six years ago, while attempting to ascertain the amount of berberina in the official resin of podophyllum as prepared by myself by the process of the U. S. Pharmacopœia for 1860, I obtained, by treatment with boiling water, on cooling the filtrate, a light brownish-

yellow powder, which was at first supposed to be the native berberina salt, but was found to be entirely free from this alkaloid. On continuing the treatment of the undissolved residue with boiling water, the filtrate, on cooling, continued to deposit a powder, at first of the same color as that previously obtained; but subsequent portions of the clear filtrate separated a much darker colored powder. A comparatively small amount only of the officinal resin appeared to be insoluble in the hot water, but its percentage was not ascertained.

This observation was conclusive proof that the term *resin* is a misnomer for this officinal preparation, although it is the best descriptive term that, in our present state of knowledge, can be applied. But the behaviour to water, as indicated above, appears also to point to a method whereby the constituents of this so-called resin may be separated from each other, or their complete separation be verified. To the above facts I have since called attention in my lectures, endeavoring to induce some one having sufficient time at command to investigate the true chemical nature of this preparation. It is to be regretted that Mr. Power's time did not permit him to pursue the subject further.

The complete solubility of the active portion of resin of podophyllum in water being conclusively proven, it may perhaps be taken advantage of in such cases where it is to be given in very small doses, and in a pleasant liquid form. But the precise extent of this solubility in water of different temperatures requires to be ascertained.

In a paper by Mr. C. Bullock (see *American Journal of Pharmacy*, 1862, p. 114,) it is stated, upon the authority of the "Journal of Materia Medica," that the resin soluble in ether varies considerably with the season in which the officinal rhizome is collected; careful assays of the latter as collected monthly, (in the Middle States) from April to October, can alone determine the extent of this variation, and may then, perhaps, also clear up the contradictory statements relating to the activity of the portion insoluble in ether; of this solvent not only the commercial name (washed or concentrated ether) should be given, but its correct specific gravity at 60° F. should always be ascertained. Those interested in this investigation are referred also to a note by Prof. Procter, in the *American Journal of Pharmacy*, 1860, p. 210.

AQUA CAMPHORÆ.

By FRANKLIN T. HARTZELL, G. P.

Extract from an Inaugural Essay.

The officinal formula for this preparation seems theoretically defective. The Pharmacopœia merely directs that the camphor, reduced to a pasty mass with alcohol, be rubbed with the carbonate of magnesium and water, and filtered. In practice I have found that the resulting milky liquid, however carefully rubbed, becomes more or less lumpy or gritty in consequence of the precipitation of the camphor among the particles of the magnesia on the addition of water. It is obvious that the particles of camphor enveloped in these little lumpy masses are not in a favorable condition for solution in the water. This difficulty is easily obviated. In making camphor water I discard the use of alcohol entirely. With a few drops of ether I reduce the necessary quantity of camphor, in a mortar, to an impalpable powder in a few moments. The ether evaporates instantly and is not open to the same objection as the alcohol, that of contaminating the resulting medicated water by its presence. I then rub the powdered camphor with the magnesia and a part of the water, and pour the liquid through a funnel-sieve into a bottle of the requisite size, returning to the mortar the lumpy portions that at first refuse to pass through the sieve, and rubbing them with more of the water. If the resulting milky liquid be now thoroughly agitated, and filtered immediately, the camphor water will be found to be decidedly stronger than many specimens, made by the ordinary process, that have stood some time and received occasional agitation before filtering; and if it be allowed to stand in the stock bottle, occasionally agitated, and filtered off when wanted for use, its superiority to that made in the officinal way will be perceived to be unquestionable. In making large quantities of camphor water, the powdered camphor might first be passed through a tolerably fine sieve, dry, so as to avoid the annoyance, when rubbing it with the magnesia and water, of encountering any lumps, which, through the carelessness of the operator, might have been left undissolved by the ether. But in making either large or small quantities, the milky liquid should be poured through the funnel-sieve, and the lumpy portions rubbed down in the manner previously described.

GLEANINGS FROM THE EUROPEAN JOURNALS.

BY THE EDITOR.

The constitution of Tannic Acid.—Hugo Schiff gives a critical review of the researches on this subject, particularly since the investigations of Strecker,* and from these as well as his own experiments arrives at the conclusion that the presence of glucose is entirely unimportant for the reactions generally ascribed to tannic acid, and that, therefore, this compound, if perfectly pure, is *not a glucoside*.

Gallic acid was slowly heated with oxychloride of phosphorus to between 115 and 120° C., and kept at this temperature for several hours; during this process only hydrochloric acid gas was evolved. The residue in the flask was purified from gallic and phosphoric acids by washing with *absolute* ether, dissolving in cold water, filtering and precipitating by table salt. After further purification an amorphous and inodorous mass was obtained, possessing all the chemical reactions of tannic acid, and which, by boiling with dilute muriatic or sulphuric acid, was completely converted into gallic acid, from which tannic acid was again obtained by treatment with phosphor-oxychloride. This reconversion of one substance into the other was repeated three times; the wash waters collected in the process contained neither glucose nor any other saccharine body. Ultimate analysis gave results agreeing with the formula $(C_{14}H_{10}O_9)$ for tannic acid, and it is accordingly formed from gallic acid by the abstraction of water $(2C_7H_6O_5 - H_2O)$; being the first anhydride of two molecules of gallic acid, it is *digallic acid*.

The same result was more easily obtained when gallic acid was treated with arsenic acid, which is not reduced thereby. Commercial tannin contains glucose; on dissolving it in a solution of acetic anhydride in an equal volume of glacial acetic acid, heating to boiling and then pouring into water, triacetylglucose is dissolved and pentacetyltannic acid precipitated. The latter yields, by recrystallization, white wart-like crystals, from which the digallic acid may be obtained by plumbic hydrate.

The tannin of galls appears to be $C_{34}H_{23}O_{23}$, that is $C_6H_{12}O_6$ (glucose) + $2C_{14}H_{10}O_9$ (digallic acid) — $2H_2O$. This compound is readily soluble in ether diluted with water and alcohol; but if absolute ether containing little alcohol is employed, the gallotannin is decomposed,

* See American Journal of Pharmacy, 1855, 49.

and but little glucose enters into solution. The variable composition of commercial tannin is, therefore, due to the menstruum employed in its preparation, and the different amounts of glucose obtained by various investigators are thereby satisfactorily explained.—*Annalen d. Chem. und Pharm.* clxx, 43–88.

Buchu Leaves.—Professor Flückiger obtained from the volatile oil of *Barosma betulina*, by exposure to cold, a stearopten, crystallizing in handsome needles and resembling the stearopten of peppermint oil; the elæopten, rectified over sodium, has the composition $C_{10}H_{16}O$. The aqueous infusion of the leaves contains, besides mucilage, a body allied to quercitrin or rutin, which is not altered by ferrous salts, but colored brown-greenish by ferric chloride. The mucilage is contained in a thin layer of cells (collenchyma) situated immediately beneath the epidermis of the upper surface. This layer expands very considerably if the cross-section of a leaf is immersed in glycerin, or more rapidly in water. The expanded collenchyma has one-half the thickness of the leaf of *Barosma betulina*; but fully two-thirds of the thickness of the leaves of *B. crenulata*, *B. serratifolia* and *Empleurum serratifolium*, all of which are much thinner than those of the first-named species.—*N. Repert. f. Pharm.*, 1874, p. 102–105.

Adulteration of Volatile Oil of Mustard.—Dr. Hager (Pharm. Central Halle) has obtained a sample of this oil which was heavier than water, and was probably adulterated with oil of gaultheria, for its solution in alcohol was colored violet by ferric chloride.

Balsam of Tolu.—P. Carles obtained the acid from soft and hard tolu balsam by digesting it with water and cooling. After recrystallizing from alcohol and water, the nature of the acid was determined volumetrically and the figures 147.85 and 148.40 were obtained for the acid as obtained from hard and soft tolu respectively. The combining weight of benzoic acid, $C_7H_5O_2$, being 122, and that of cinnamic acid, $C_9H_7O_2$, = 148, the author concludes that tolu balsam contains only cinnamic, but no benzoic acid.—*Journ. de Pharm. et de Chim.*, 1874, Feb., 112.

Iodine Caustic is prepared by Rieseberg by dissolving four grams of iodine in eight grams of glycerin. It is used in lupus by applying it once every other day, and covering the parts with gutta serena. This treatment is continued for several weeks.—*Ibid.* 140.

Fluid extract of Chestnut Leaves.—Dr J. Eisenmann, assistant physician at the polyclinic of Vienna, has experimented with this preparation, made from the leaves of the European variety of *Castanea vesca*, collected during the months of June, July and August. The remedy was tried only in such cases of whooping-cough which had but recently entered into the spasmodic stage, and in which the subsequent course of the disease could be well ascertained. Tried in comparison with belladonna, extr. cannabis indicæ, chloral hydrate, inhalation of petroleum vapor, etc., the results were such that the author calls the attention of European physicians to this remedy, which was prepared by the formula published in this Journal, 1871, p. 530.—*Zeitschr. d. Oesterr. Apoth. Ver.*, 1874, 192, from *Wiener Mediz. Presse*.

Permanganic Acid and the Volatile Oils.—A mixture of two parts of perfectly dry permanganate of potassium with two or three parts of concentrated sulphuric acid is a most powerful oxidizing agent, owing to the separation of permanganic acid and its immediate decomposition with the liberation of oxygen. Volatile oils are violently affected by this mixture, if about ten drops are placed in a little dish and then touched with a stout glass rod previously dipped into the mixture. The following produce explosions, often most violently: oils of thyme, mace, turpentine rectified, spike, cinnamon, origanum, rue, cubeb and lemon. The following oils are simply inflamed, particularly if poured upon blotting paper and then touched with the mixture, though under certain still unknown circumstances explosion may occur: Oils of rosemary, lavender, cloves, rose, geranium, gaultheria, caraway, cajuput, bitter almond and rectified petroleum. The following substances are ignited without explosion: alcohol, ether, wood spirit, benzole, chlorelayl, sulphide of carbon and cotton. Gun cotton and gunpowder are not ignited.—*N. Repert. f. Pharm.*, 1874, 177.

Iodo-Bromide of Calcium Compound, By J. R. Black, New York, recommended as an alterative and in cholera, cutaneous diseases, etc., has been analyzed by Dr. Goddefroy of Vienna and found to contain the chlorides of calcium, aluminium, magnesium and sodium; bromide, iodide, sulphate, phosphate and silicate of sodium, and nitrate of potassium. It is probably identical with the so-called chloralum.—*Pharm. Zeitung*, 1874, No. 22.

*Neutral Iodide of Potassium.**—T. B. Groves finds the following

* See page 141 of the March number of this Journal.

the simplest method for obtaining the salt entirely neutral; the commercial salt is dissolved in just sufficient water, its alkalinity is neutralized with dilute sulphuric acid, a small quantity of alcohol is added to remove the sulphate of potassium, and the liquid filtered and evaporated to crystallize. The crystals are small, colorless and speedily turn yellow in contact with the air. The neutral iodide seems to be unable to withstand the combined attacks of ozone and carbonic acid, until a certain degree of alkalinity has been established.

Alfred Southall, in manufacturing this chemical, finds it necessary to have the solution as nearly neutral as possible in order to obtain semi-transparent crystals; in the presence of an excess of acid opaque crystals are obtained.—*Pharm. Journ. and Trans.*, Feb. 21, p. 669.

(Our limited experience with iodide and bromide of potassium points to the necessity of having the solutions alkaline in order to obtain opaque crystals.—*Editor Am. Journ. Pharm.*)

Fused Nitrate of Silver, as met with in commerce, is variable in color and often quite black. E. Bouillon regards as the principal causes the presence of some chloride of silver, the decomposition during fusion of a portion of nitrate of silver, or the presence of some oxide of copper. White lunar caustic is sometimes even more impure in consequence of the addition of potassium nitrate. The author obtains unobjectionable results by the following manipulation: 20 grams pure nitrate of silver, five grams distilled water and one gram pure nitric acid are heated, with the precaution that the margin of the solution is not overheated. After the evaporation of the liquid the heat is carefully regulated and after the salt has commenced to fuse it is often stirred with a glass rod to detach the solid mass when adhering to the sides. When about three-fourths of the salt has liquefied, it is at once poured into a perfectly clean suitable copper-mould, when the sticks are obtained of unobjectionable solidity and opaque whiteness. The residue in the capsule should be treated with water and nitric acid as before.—*L'Union Pharm.*, 1874, Feb., 35.

Potassium Nitrate in Amarantus.*—A. Boutin has obtained from *Amarantus melancholicus ruber*, after drying at 100° C., 16 per cent. nitrate of potassium, equal to 22 grams of nitrogen and 72 grams of potassium for each kilogram of the herb. *A. atropurpureus* yielded 22.77 per cent. potassium nitrate, equal to 31 grams of nitrogen and

* See also American Journal of Pharmacy, 1873, p. 266.

103.5 grams potassa for one kilogram of dry herb.—*Journ. de Pharm. et de Chim.*, 1871, April, p. 285.

Ointment for prurigo.—Norwegian tar 15 grams, Rousseau's laudanum* 2 grams, lard 60 grams. Mix. To be used morning and evening. Dr. Girou de Buzareingnes.—*Ibid.* p. 299.

Iodated Syrup of Coffee.—Dr. Calvo recommends syrup of coffee as the best vehicle for disguising the taste of iodide of potassium, and proposes for the administration of this salt, a syrup made by dissolving 16 grams of the iodide in 500 grams of syrup of coffee. Dose, a tablespoonful, twice or thrice daily.—*Ibid.* p. 299.

CHLORAL HYDRATE AND CAMPHOR.

By J. F. BROWN.

When camphor in fine powder is rubbed in a mortar with an equal weight of pure crystallized hydrate of chloral, the mass becomes damp, and slowly dissolves to form a syrupy liquid, strongly resembling glycerin in appearance.

A rise in temperature of about three degrees Fahr. accompanies this change, showing that a chemical reaction of some kind must evolve heat more than sufficient to counterbalance the loss of sensible heat which always attends the passage of a substance from the solid to the liquid state.

No acid or irritating fumes, however, were perceptible during the solution, and the resulting liquid was neutral to test paper.

It was unaffected by solution of silver nitrate, left a greasy stain when dropped upon paper—permanent for some hours—and retained the taste and smell of its components.

A slip of paper dipped into it did not ignite very quickly when brought near a light, but burnt with a bright white flame, having emerald green edges.

It was readily soluble in alcohol and ether, but distilled water converted it into a soft translucent solid, from which, after some time, hydrate of chloral appeared to be dissolved out, leaving the camphor in crystalline grains.

* Rousseau's laudanum is made by fermenting 1 p. opium, 3 p. honey and 15 p. water, with some yeast, expressing, filtering and evaporating to 3 p., after which 1 p. alcohol is to be added.—*Paris Codex*.

These facts appear to point to an abstraction of water by the camphor, and solution of the latter in the liberated chloral; but such an avidity for water is not shown by camphor under ordinary circumstances, and the cause of this curious liquefaction is not easily discernible.

[* * Some time since the *Medical Record* quoted from an American source a statement that if camphor be powdered by rubbing it in a mortar with a few drops of spirit, and an equal weight of chloral hydrate added, a liquid is produced which is a valuable local anæsthetic. Mr. Lennox Browne, writing to the *British Medical Journal* (March 7th, p. 304), confirms this statement, and says that it is of the greatest value as a local application in neuralgia. Mr. Browne having employed it during several months, has found great and sometimes instantaneous relief to follow its application in every case. It is only necessary to paint the mixture lightly over the painful part and allow it to dry. The application never blisters, though it may occasion a tingling sensation of the skin. The compound has also been found of great service in the relief of toothache.—ED. PHARM. JOURN.]—*Pharm. Journ. and Trans.*, March 14, 1874.

EXTRACT OF MEAT.

By C. F. CHANDLER, PH. D., AND F. A. CAIRNS, A. M.

The following analyses were made for the purpose of determining, as fully as possible by analysis, the comparative value of the meat extract made by the "Liebig Company" (*Fray-Bentos Extract*) and that made at the "San Antonio Meat Extract Factory." The most important test of the comparative value of these extracts is probably the percentage of nitrogenous matter soluble in alcohol, and the percentage of nitrogen in this matter. This is largely due to the fact that gelatin is not soluble in this liquid.

	Liebig's Fray Bentos Extract.	San Antonio Meat Extract Factory.
Water (expelled at 212° F.),	17.21	14.78
Ash,	13.01	18.16
Substances soluble in 88 per cent. alcohol, dried at 212° F.,	33.09	44.57
Fat, etc., soluble in ether,	0.14	0.18

	Liebig's Fray Bentos Extract.	San Antonio Meat Extract Factory.
Total nitrogen,	8.18	9.12
Nitrogen in portion soluble in alcohol,	3.19	4.75
Soda,	2.44	2.85
Potassa,	9.20	7.55
Lime,	0.05	0.06
Magnesia,	0.56	0.50
Oxide of iron,	0.02	0.07
Chlorine,	2.98	1.95
Sulphur,	0.29	0.22
Sulphuric acid (SO ₃),	0.03	0.03
Phosphoric acid (PO ₃)	8.20	5.64

School of Mines, Columbia College, N. Y., Feb. 4, 1874.

—American Chemist, April, 1874.

IMPROVING WINES.

By J. M. MERRICK, B. Sc.

The process of Pasteur for improving wines by gently heating them is well known and practised in France. I have not heard of its application in this country, nor have I been informed that the use of neutral tartrate of potash is here in vogue to remove by precipitation a suitable fraction of the excessive amount of tartaric acid present in the juice of our native wines.

I call the attention of the readers to these two well-known methods, because I have practised both on a small scale, and can testify to their practical value.

In the autumn of 1871 I made from Concord grapes of my own raising a cask of about 120 gallons of wine, adding one and one-half pounds of sugar to each gallon of juice. This gave a beautiful bright red, clear wine, of not unpleasant flavor, and containing by my analysis, made in June, 1873, 17.5 per cent. of alcohol. The fault with it was that it was undrinkably sour, good judges asserting that it had gone over so far that it could not be cured. On analysis, I found it to contain a little more than *one per cent.* of free acid, mainly tartaric. I added in September last about seven pounds of neutral tartrate of potassa to the cask with gratifying results. The color of the wine is lightened, the flavor uninjured, and the hardness and sourness diminished, so that the work of four or five years seems to have been done in as many months.

Mr. E. W. Bull, of Concord, Massachusetts, the originator of the Concord grape, has produced a seedling from the Concord, called the Cottage, and from this new grape the past season I made about one gallon of wine, which a week ago was harsh, crude and not palatable. By the addition of a trifling—unweighed—amount of neutral tartrate of potassa, and by heating the wine to about 50° C., its character has been so changed and improved that no one recognizes in the present mild, high flavored, and not acid wine, the former harsh, crude, and repulsive product.

Laboratory, 59 Broad St., Boston, Jan. 15, 1874.

—American Chemist, March, 1874.

Minutes of the Philadelphia College of Pharmacy.

PHILADELPHIA, 3d Month 30th, 1874.

The annual meeting of the Philadelphia College of Pharmacy was held this afternoon, at the Hall of the College. Twenty-eight members were present. Dillwyn Parrish, President, in the chair.

The minutes of the meeting in December last, and of the special meeting held in February, were read and approved.

The minutes of the Board of Trustees for the past three months were read by William C. Bakes, Secretary of the Board. They inform us that at the late Commencement, held at the Academy of Music, the Diploma of the College was conferred upon eighty-one graduates. They also further state that the Board have purchased the three houses adjoining the College, fronting on Tenth Street, making our lot an equal width throughout its entire length, for sixteen thousand five hundred dollars. The minutes of the Board were, on motion, unanimously approved.

Thomas S. Wiegand, Librarian, made the following report, which was accepted and approved:

"The Librarian respectfully reports that since the last annual meeting there have been added to the library about fifty new volumes, most of them being exchanges with other scientific bodies, which, being of permanent interest to the pharmacist, have been bound. The binder has now in hand forty more volumes which will be finished in a short time. The theses of all who graduated in the spring of the past year have been bound, and there are now forty-seven volumes of manuscript of this kind in the library. By direction of the Board of Trustees the library was opened one afternoon and two evenings each week during the past lecture season, and over one half of the volumes in the library have been arranged in accordance with the subjects treated of, preparatory to making a new catalogue."

The following report of the Curator was read and accepted:

"The Curator would respectfully report that the work of refitting the cabinet is still progressing. The New England Glass Company, who are making some sample glass jars, have not finished their work, but they expect to forward the remainder of the jars in a few days. Quite a number of donations to the cabinet have been, and still continue to be, received through the pharmaceutical meetings, and it is hoped that when the new cases have been fitted-up with the glass jars there will be a large increase in the contributions.

JOSEPH P. REMINGTON."

Professor J. M. Maisch, on behalf of the Publication Committee, made the following report, which was read and approved :

To the Philadelphia College of Pharmacy :

"The Publishing Committee respectfully reports that its duties have been duly and successfully attended to during the past year, as will be seen from the annexed reports. The editor refers in his report to a few unavoidable delays in the publication of the monthly numbers of the Journal, which elicited inquiries from many subscribers, in the belief that their copies had miscarried ; the arrangements with the printer are such that similar delays are not likely to occur during the ensuing year. The editor also states that original articles in the Journal during the past year have been contributed by sixty authors, and bespeaks for the future a renewed interest on the part of its readers by original contributions, either directly or through the medium of the pharmaceutical meetings of the College.

The General Index of the Journal, compiled by Mr. Hans M. Wilder, was issued shortly after the last annual meeting, and has elicited the approving comments of all who have examined it. Its sale has not been so large as might have been anticipated, and many copies must still be sold merely to reimburse the Committee for the cash expenses incurred. It is to be hoped that most of the readers of the Journal will procure a copy, through which the usefulness of all the volumes published prior to 1871 is greatly enhanced, and their consultation facilitated.

The Committee cannot close its annual report without alluding to the great loss sustained in the death of Professor William Procter, Jr., who, for thirty-two consecutive years, has been its most efficient member, and since its reorganization in 1871, its chairman, while during a period of nearly twenty-one years he had acted as the sole editor of the Journal.

JAMES T. SHINN, *Chairman pro tem.*
CHAS. BULLOCK,
JOHN M. MAISCH,
THOS. S. WIEGAND, *Secretary.*

The Editor's report to the Publication Committee was also read, giving a detailed statement of the labor performed. The following is an extract from it :

"The pharmaceutical meetings have within the last few years been growing in interest, notwithstanding the papers presented there have not been so numerous as might be expected. But even in this an improvement is noticed, which would leave nothing to be desired, if all members would endeavor to be present and to communicate their observations and discoveries, either in writing or verbally. The published records of these meetings have attracted considerable attention, not only in this country but also abroad, and it would seem to be but a duty each member owes to the College and its reputation to feel interested in the success of these meetings, from which he is likely to derive considerable information of usefulness and direct benefit in his business."

JOHN M. MAISCH, *Editor.*

Charles Bullock, Treasurer of the Publication Committee, read the annual report, which was accepted and approved. It sets forth the moneyed operations of the past year in a very favorable light, and shows this department of the College to be in a very prosperous condition.

Thomas S. Wiegand, Chairman of the Committee on the Sinking Fund, made a report showing the balance of cash in his hands to be \$292.

The following letter from Peter Williamson, Esq., one of the founders of the College, to the President, was read:

804 PINE STREET, March 10th, 1874.

TO DILLWYN PARRISH:

Dear Sir,—In reply to your note of this morning, I will merely say that I give the sum of five hundred dollars (the check for which you will find enclosed) to the Philadelphia College of Pharmacy, in trust for the creation of an endowment fund, the interest of which to be applied for the benefit of such needy and deserving applicants as the Trustees may select, in defraying the requisite expenses attendant on the lectures and other modes of instruction adopted by the College.

With my thanks for the interest you have evidenced in the carrying out of his design, which I have for some time entertained,

I remain, truly, your friend,

PETER WILLIAMSON.

The donation was accepted, and the check passed over to the Treasurer of the College.

Joseph P. Remington offered the following resolutions, which were unanimously adopted, and the Secretary was directed to send a copy to Mr. Williamson:

Resolved, That the College gratefully appreciate the warm interest manifested by our esteemed friend Peter Williamson, and direct that the donation be placed in the hands of the Trustees, to be invested by the Treasurer, and kept as an endowment fund, the interest of which is to be applied in accordance with the wishes of the generous donor.

Resolved, That the letter of Peter Williamson be filed among our records, and that a copy of these resolutions be forwarded to him with the thanks of the College.

A motion that the further consideration of the subject, relative to the fulfillment of the wishes of Mr. Williamson, be referred to the Board of Trustees for their action, was adopted.

The following letter was read from Joseph O. Turnpenny:

813 SPRUCE STREET.

DILLWYN PARRISH, *President of the Philadelphia College of Pharmacy*:

My dear Friend,—I send herewith an extract from the Will of our lamented friend the late William Procter, Jr., deceased, which please receive and present to the next meeting.

Thy obliged friend,

JOS. O. TURNPENNY.

3d mo. 20th, 1874.

Extract from the Will of the late William Procter, Jr., deceased.

I give to the Trustees of the Philadelphia College of Pharmacy the sum of five hundred dollars, in trust, to be permanently invested, and the interest to

be annually expended, either for a medal, for books, for instruments, or for any other appropriate object that may be deemed best by the Board, and the same given as a reward to the most meritorious Graduate in Pharmacy, when in its opinion such a reward is deserved.

The Executors of the late Prof. Procter not being prepared to hand over the bequest, no action of the College thereon was deemed requisite at this time.

The Treasurer reported the names of six members of the College who are in arrears for over four years. A motion ordering their names to be stricken from the roll of members, under a rule of the By-Laws, was unanimously adopted.

Resolutions relative to the death of Professor Procter, received since the publication of the March number of the Journal, from the Chicago and Louisville Colleges of Pharmacy, were read by Prof. Maisch, and, on motion, referred to the Publication Committee. (These resolutions appeared in the April number of the Journal.)

This being the annual meeting, an election for officers was ordered, a recess being granted for the purpose. William B. Webb and Edward C. Jones acting as tellers, reported the following gentlemen elected to the respective stations enumerated below, viz.:

President—Dillwyn Parrish.

First Vice President—Charles Bullock.

Second Vice-President—Robert Shoemaker.

Treasurer—Samuel S. Bunting.

Recording Secretary—William J. Jenks.

Corresponding Secretary—Alfred B. Taylor.

Board of Trustees—Robert Bridges, M.D., John M. Maisch, Daniel S. Jones, Thomas S. Wiegand, James T. Shinn, T. Morris Perot, William B. Webb, Joseph P. Remington.

Publication Committee—John M. Maisch, Charles Bullock, Thomas S. Wiegand, James T. Shinn, Henry N. Rittenhouse.

Sinking Fund Committee—Thomas S. Wiegand, T. Morris Perot, James T. Shinn.

Editor—John M. Maisch.

Librarian—Thomas S. Wiegand.

Curator—Joseph P. Remington.

There being a vacancy in the Board of Trustees, caused by the election of Charles Bullock as First Vice-President, Edward C. Jones was nominated to fill his place. There being no other nomination, the President was, on motion, requested to cast an affirmative ballot for him, which being done, Mr. Jones was declared unanimously elected a Trustee for the unexpired term of Charles Bullock.

There being no further business, on motion, adjourned.

WILLIAM J. JENKS, *Secretary*.

Minutes of the Pharmaceutical Meeting.

On April 21st, 1874, a regular monthly meeting was held at the College, fifteen members present. The meeting was called to order by Mr. Charles Bullock, Vice-President. The registrar being absent, the meeting appointed J. K. Hecker, Secretary pro tem.

Under the head of donations to the library, Prof. Maisch presented a copy of the Year Book of Pharmacy and Transactions of the British Pharmaceutical Conference, for 1873; also the Proceedings of the American Pharmaceutical Association, for 1873, and a bound volume of the Public Ledger Almanac, 1870-73, which were accepted and the thanks of the College tendered.

Prof. Maisch exhibited a handsome specimen of the flowers of *Pyrethrum roseum*, obtained from Messrs. Bullock & Crenshaw. The plant grows in Asia Minor, the Caucasus Mountains, etc., and when powdered constitutes the so-called Persian insect powder,

Dr. Pile read a paper on the proper specific gravity of sulphuric acid of the U. S. P.* In the discussion which followed, attention was drawn to some inconsistencies of the pharmacopœia in directing the use of absolutely pure chemicals, and in some processes taking notice of the usual impurities; sulphuric acid and oil of wine were mentioned among other instances.

Prof. Maisch inquired whether any member present had had any experience in mixing camphor and chloral, and to what extent the mixture is prescribed. Messrs. Heinitsh and Boring replied that they had occasionally to prepare the mixture, which, after some trituration, forms a liquid, or more slowly by leaving the two articles in contact with each other.† In regard to the cause of liquefaction a short discussion ensued, but no definite or satisfactory explanation was given.

A communication from a member of the college was read by Prof. Maisch, suggesting that a prescription bottle be devised with a lip of such shape that liquids might be dropped from it with greater facility than can be done from those at present in use. It was then stated that Messrs. Whitall, Tatum & Co. undertook to make bottles with thin lips, from which liquids could be dropped readily enough, but if the lips have too thin an edge they are very liable to splinter or crack off, making such bottles impracticable.

Mr. Boring exhibited a syrup of orange peel made by the process of the German Pharmacopœia, by treating the fresh orange-peel with German white wine. The syrup was perfectly clear, had a fine odor of wine, and when dilute a very agreeable flavor of orange.

Mr. Bullock inquired whether any of the members had noticed a precipitate in the tincture of chloride of iron, U. S. P. He said that he had noticed it himself, examined into the cause of precipitation, and considers it to be due to a deficiency of acid.‡ Prof. Maisch then stated that the Pharmacopœia di-

* See page 216.

† See also the paper on page 239.

‡ See also page 242.

rected an excess of acid to be used, and that a deficiency thereof could only occur by overheating. Mr. Boring remarked that he saw it stated in Attfield's Chemistry, that the alcohol in the tincture is unnecessary, useless and deleterious, and causes the gradual precipitation of a basic iron salt. Prof. Maisch said that the preparation, in its usual doses, could not be considered deleterious; unpleasant effects arising therefrom may most likely be referred to the presence of excessive proportions of amylic alcohol and the subsequent formation of compound amylic ethers; the compound formed from muriatic acid and alcohol are used in medicine and official in some pharmacopœias. Dr. Bridges then remarked that the diuretic properties of the tincture are due to the chlorinated ether which is slowly formed in the official preparation.

Mr. Hazard exhibited a suppository mould invented by L. R. Blackman, of Newport, Rhode Island. It is made of bell metal, nickel plated, and consists of two plates of about equal thickness, the upper one perforated and the lower containing depressions equal in number to the perforations in the upper plate; the two plates are separable and adjustable by means of set-pins and grooves, so that the openings in the upper plate register with the depressions in the lower plate, forming when taken together a conical mould. Mr. Hazard also stated that there are two sizes made, one making twenty-four suppositories of thirty grains each and one making thirty of fifteen grains each.

The meeting then adjourned.

J. K. HECKER, *Secretary pro tem.*

Pharmaceutical Colleges and Associations.

PHILADELPHIA COLLEGE OF PHARMACY.—The vacancy in this college, occasioned by the sudden death of Professor Procter, has been filled by the Board of Trustees by the election of Joseph P. Remington, Professor of Pharmacy. Mr. Remington, already favorably known by his contributions to the *American Journal of Pharmacy*, and his labors for the American Pharmaceutical Association, has had unusual advantages in fitting himself for this position, having for the last three or four years acted as assistant at the lectures of the late Professors Parrish and Procter, and being, therefore, thoroughly familiar with the lecture plans and system of instruction of both these teachers of pharmacy. Another important advantage of his is his former connection with the well-known laboratories of Dr. E. R. Squibb, of Brooklyn, N. Y., and Messrs. Powers & Weightman, of this city. He brings to his new position, therefore, a large practical experience, and we doubt not he will use his best efforts for sustaining the reputation of the chair in which he follows two such eminent men.

MASSACHUSETTS COLLEGE OF PHARMACY.—The commencement took place in Horticultural Hall, April 22, Professor Markoe delivering the valedictory. President Colcord conferred the degree of Graduate in Pharmacy upon the

following gentlemen: Silas Stone Bradford, (Lime water); Paul John Brown, (Digitalis); Horace Mann Burnham, (Tincture of Belladonna); John Edward Connor, (Weight and Volume of Finished Products of some of the Official Formulæ); George Henry Cowdin, (Cinchona); Lebbeus Curtis, Jr., (Opium and its Alkaloids); Frank A. Davidson, (Coffee); John Granville Godding, (Cubebs); Edward Bartelle Gordon, (Citric Acid); Jeremiah Thomas Leary, (Lac Sulphur); William Thomas Lee, (Pareira Brava); Benjamin Franklin Riddle, (Anthelmintics); James Bradbury Small, (Mistura Ferri Composita); Austin Edward Wallace, (Formulæ of the U. S. Pharmacopœia in Metrical Weights and Measures); Frank Granville Winn, (Hydrocyanic Acid). The Alumni Association prize was awarded to J. T. Leary.

NEW YORK COLLEGE OF PHARMACY.—The annual commencement took place at Association Hall, March 31. The degree of Graduate in Pharmacy was conferred by President Balluff upon the following gentlemen: G. Nolton Ashley, (Strychnos Nux Vomica); Alexander Beck, (Commercial Hydrocyanic Acid); Joseph R. Bond, (Nickel); Adolph Boyken, (Phosphorus); Louis E. Braun, (Analyses of Glycerins); John S. Broas, (Aconitum Napellus); Louis F. Buchhop, (Scale Preparations of Iron); Richard B. Cassebeer, (Hydrocyanic Acid); Max Clausius, (Strychnos Nux Vomica); Louis S. Cohen, (Synopsis of the History of Zinc); J. W. Dougan, (Ergota); H. Adolph Engel, (Sugar); Clemens L. Eschmann, (Potassii Iodidum); Sidney Faber, (Pharmaceutical Manipulations); John Ferrier, (Anæsthetics and Ohloral); William H. Griffith, (Baric Compounds); I. M. Husa, (Glycerin); Richard Kuehne, (Analysis of Urine); C. Axel F. Lagerstedt, (Syrup of Iodide of Iron); Gottlieb Meier, (Foliage, its Functions and Morphology); Charles Mitzenius, (Best mode of extracting Vegetable Substances); Frederick C. Nadler, (Adulteration of Cinchona Micrantha); Henry M. O'Neil, (Poisons); Charles Perck, (Citro-Sesqui-Iodide of Iron and Potassa); Albert C. Smith, (Digitalis); W. I. Townsend, (Carbon and its Compounds); C. Ernst Vetter, (Morphine in Residues from Laudanum); Bernhard Wendler, (Specific Gravities); Gustav F. Werner, (Products from Destructive Distillation of Wood); Robert G. Weyh, (Atropa Belladonna); Frederick Wichelns, (Poisons and their Antidotes); John L. Yatman, (Pepsin); George Zellhoefer, (Chromium and its Compounds); Robert G. L. Zoeller, (Quinia and its salts). Prizes in money were awarded to R. Kuehne, B. Wendler, and G. F. Werner. The valedictory was delivered by Professor Bedford.

This College has issued a pamphlet of 50 pages, containing historical notes of its progress, the charter and by-laws, the pharmacy acts of 1871 and 1872, code of ethics, lists of members, officers, professors, graduates and of the registered pharmacists and assistants; also a catalogue of the library, and obituary notices of members recently deceased.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—At the pharmaceutical meeting held April 1, President Thos. H. Hills in the chair, Mr. W. Martindale

read a dispensing note on chloro-mercuriate of morphia. Eight grains corrosive sublimate and four grains muriate of morphia were prescribed to be dissolved in one ounce of water, to be used for subcutaneous injection. After the salts had been dissolved in hot water, a large deposit of silky acicular crystals occurred on cooling, which were recognized as the double salt mentioned. By using a mixture of seven parts of water to five of glycerin as a solvent, the same salt crystallized in a few days, and the solution, which had been used hypodermically in the meantime, neither lessened the pain nor inconvenience which a simple solution of corrosive sublimate would have produced. A solution of alkaline chloro-albuminate of mercury made from Staub's formula,* but more concentrated, was made and found to cause less pain and to enter more readily into circulation than a simple solution; but after some time it became curdy.

Mr. E. M. Holmes read a paper entitled *Materia Medica Notes*, after which Mr. Hanbury stated that he had seen a drug sold as arnica root which did not contain any arnica at all, but consisted entirely of a root unknown to him.

Dr. De Vrij brought up the subject of perchloride of iron; he objected to have the liquor substituted for the tincture, and stated that a really neutral solution of the salt may be obtained by passing chlorine gently through a solution of ferrous chloride and driving off the excess of chlorine in a water-bath; if now mixed with alcohol the tincture remains bright and clear if exposed to the sunlight, but yields a precipitate if kept in the dark.

Prof. Attfield expels the excess of chlorine, instead of by heat, by passing through the solution a steady current of air; if the tincture is exposed to the light, a reduction of ferric to ferrous chloride takes place and ethereal compounds containing chlorine are formed. Alcohol, therefore, does not preserve ferric chloride, but decomposes it, and the tincture is not a definite preparation, while the aqueous solution may be kept for any length of time without spoiling.

After some reference to Bestucheff's golden tincture, J. W. Umney read a paper on the *British Pharmacopœia Addendum*, and a discussion took place in relation to variations in different issues of the same. Professor Redwood stated that the proposed additions had been printed with the title "addendum" merely for circulation among the members of the Medical Council, whilst the official publication has only recently been issued under the title of "Additions to the Pharmacopœia."

* Staub's formula directs to dissolve 1.25 grams each of corrosive sublimate and chloride of ammonium, and 4.15 grams chloride of sodium in 125 grams of water. A solution of the white of one egg is made in sufficient water to obtain 125 grams; the two solutions are mixed and filtered.
—*Journ. de Pharm. et de Chim.*, 1873, p. 382.

Editorial Department.

PHARMACEUTICAL LEGISLATION.—On pages 209 to 213 we publish an article upon this subject, written by Mr. Charles C. Fredigke, of Chicago, in which the ground is taken that the laws, as they have been passed in several States within the last four or five years, are contrary to the Constitution of the United States. This is a new argument, which we do not remember to have met with since 1867, when this question for the first time came up before the American Pharmaceutical Association. We do not profess to be well versed in law, but we are aware that legal advice has been taken in several places, and that the answer invariably has been that the right of the Legislatures to pass such laws cannot be construed into an unconstitutional interference with the business of an apothecary; but that a law regulating the practice of pharmacy is simply a regulation of sanitary police, and as such rests on the same basis as, for instance, laws and regulations concerning the abatement of nuisances, the manufacture, storage and sale of gunpowder, etc. We have never heard the right of States questioned to make and enforce sanitary regulations, and presume that this is one of the powers which, by the Constitution, is not delegated to the United States, nor prohibited to the States; and that it is therefore reserved to the latter. This must certainly be the correct view, since the prosecutions, which were instituted under the pharmacy acts in Baltimore, New York and Rhode Island, have invariably resulted in the conviction of the offenders.

Mr. Fredigke's position is probably correct, that nobody can be called upon to show *how* he came about his profession: that his ability to practice it is the only evidence required. Yet it must be borne in mind that lawyers are nowhere in this country admitted to practice their profession in the courts until they have studied a certain length of time and have passed a satisfactory examination. Moreover, their names may be stricken from the roll of attorneys for unprofessional conduct, when they will be absolutely debarred from appearing before the courts on behalf of clients, although no power can prevent them from giving legal advice to those who may consult them after they have lost their standing in court. Similar regulations, we believe, are in force in all the States, and it seems to us that since most of the cases entrusted to lawyers involve only questions of money or property, that the State should certainly have the power to prescribe certain regulations for a trade or profession, to the followers of which the health and even the life of the public is daily entrusted.

Pharmacy is no concern of the Government at large, neither is medicine and surgery; for the general Government does nothing towards maintaining medical colleges. Yet the aspirant for a position in the medical corps of the United States army is required (and this is one of the first conditions) to furnish proof that he has graduated at a reputable college; this, among other qualifications, must be produced before the applicant is admitted to an examination. The Government, through its officers, has established a standard, which is in advance of the accomplishments required by most medical col-

leges as *sufficient* to entitle the student to the legal right to affix to his name the coveted M. D. A similar standard would doubtless have been established if pharmacy had as yet been recognized as an essential branch of the hospital service of the national army and navy. At present, in both services, such applicants are preferred for the position of hospital steward, who are well versed in, or at least acquainted with, pharmacy; but any intelligent soldier may be selected to fill an occurring vacancy.

It is an entirely different question whether the pharmaceutical laws, as far as enacted, can be or have been carried out. While we do not believe that the Supreme Court of the United States could declare these laws unconstitutional, it is nevertheless true that their effectiveness does not solely depend upon either a favorable or adverse legal decision, but, to a very considerable degree, upon those who may be called upon to carry them out. If their appointment rests with a political officer, he will probably, in many cases, be more influenced by party considerations than by the professional fitness of the aspirants. The administration of such laws should therefore always be entrusted to incorporated pharmaceutical associations or colleges.

The measures advocated by Mr. Fredigke tend towards a system similar to those which have been in force in the greater portion of Europe; but which, it seems to us, are fast losing their hold to make room for others more in accordance with the progressive spirit of the present time. The very stringent laws by which pharmacy in Germany has been regulated, have been unable to prevent the retailing of many drugs by others than pharmacists, and the so-called "wild apothecaries" appear in some places to do a thriving business, to the detriment of the "approved apothecaries," who are hemmed on all sides by regulations going into minutiae. The monopolies there created by the State in the limitation of pharmacies, have enhanced the price of these establishments much beyond their real value, so that many are heavily mortgaged. This fact appears to be one of the principal causes that have thus far operated against the removal of many restrictions, and against the reformation of pharmaceutical matters more in concord with the principles of free trade. But already influential voices are being heard advocating a gradual relinquishment of ancient privileges, and in order to stave off a sudden abrogation, to inaugurate a system of redemption of these fictitious values similar to that lately adopted in Sweden, whereby every new establishment will have to contribute a certain sum towards that end, until at a previously fixed time the restrictive measures cease. The pharmaceutical supervision by the State will then hardly mean anything else, but to insure the thorough qualification of the pharmacist and his personal responsibility. Towards this end, it seems to us, pharmacy is gravitating in Continental Europe from its isolated position of restriction, and in this country from its place in the ranks of unrestricted trade.

The suppression of the manufacture and sale of quack nostrums has not been accomplished in Continental Europe; prohibitory measures will always be more or less inoperative, particularly in large communities; but we agree with Mr. Fredigke that it is an evil requiring regulation. It will be better, however, we think, if this question is not mixed up with the former—the qualification of the pharmacist.

Laws, it should be remembered, cannot alter men ; that is a question of time and of the correct use of the educational means at our command ; if these are judiciously employed, we believe that the progress of pharmacy in the United States will, in the future, be even more marked than it has been during the last three or four decades.

ARTICLES OF IMMORAL USE.—Our readers are undoubtedly aware that an act of Congress forbids the sending by mail of obscene articles ; but how far pharmacists and druggists may be affected thereby is probably not generally known, and we should hardly believe it possible, if we had not learned from a reliable source, that recently an apothecary was found guilty, and fined under this act, for no other offence than that of having sent by mail a female syringe.

The conviction was based upon the literal construction of the law, though it is scarcely possible that the judgment should not be reversed if the case was carried to a higher tribunal.

Below we give a copy of the section in question, the portion italicized being the one under which the conviction took place, and under which almost any article sent by mail might be condemned.

An Act for the suppression of trade in, and circulation of, obscene literature and articles of immoral use, approved March 3, 1873.

Be it enacted, etc.,

SECTION 2. That Section 148 of the act to revise, consolidate and amend the statutes relating to the Post-Office Department, approved June 8th, 1872, be amended to read as follows :

SEC. 148. That no obscene, lewd or lascivious book, pamphlet, picture, paper, print or other publication of an indecent character, or any article or thing designed or intended for the prevention of conception, or procuring of abortion, *nor any article or thing intended or adapted for any indecent or immoral use or nature*, nor any written or printed card, circular, book, pamphlet, advertisement or notice of any kind, giving information, directly or indirectly, where or how, or of whom or by what means either of the things before mentioned may be obtained or made, nor any letter upon the envelope of which, or postal card upon which, indecent or scurrilous epithets may be written or printed, shall be carried in the mail. And any person who shall knowingly deposit, or cause to be deposited, for mailing or delivery, any of the hereinbefore mentioned articles or things, or any notice, or paper containing any advertisement relating to the aforesaid articles or things, and any person, who in pursuance of any plan or scheme for disposing of any of the hereinbefore mentioned articles or things, shall take, or cause to be taken, from the mail any such letter or package, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall, for every offence, be fined not less than one hundred dollars nor more than five thousand dollars, or imprisoned at hard labor not less than one year nor more than ten years, or both, at the discretion of the Judge.

SEC. 5 directs the seizure and condemnation of such articles or things, warrants for the same to be issued by a Judge of a District or Circuit Court of the United States, upon a complaint in writing of any violation of this act and founded on knowledge or belief, and, if upon belief, setting forth the grounds of such belief.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on Pharmacy; designed as a text-book for the student, and as a guide for the physician and pharmacist, containing the official and many unofficinal formulas, and numerous examples of extemporaneous prescriptions. By Edward Parrish. Fourth edition, enlarged and thoroughly revised by Thos. S. Wiegand, G. P. Philadelphia: Henry C. Lea, 1874. 8vo, pp. 977

This work has been in the hands of the pharmacists of this country for so long a period that we may well assume that all our readers are familiar with the previous editions, so that it is mainly necessary for us to notice the difference in the arrangement of the matter of the present edition, and the changes made necessary by the appearance of the new Pharmacopœia and by the general progress of science.

The preliminary matter has been arranged in two parts, the first of which treats of shop furniture, implements, store-room, cellar and laboratory, and introduces several new topics, like ice vault, furnace heat, &c. Part II is devoted to pharmacopœias, weights, measures, specific gravity, and the generation and application of heat. Part III is taken up with inorganic pharmaceutical chemistry; Part IV with pharmacy in its relation to organic chemistry; Part V with pharmacy proper (galenical pharmacy), and Part VI with extemporaneous pharmacy, which is followed by an appendix similar to that contained in former editions.

Each part, as heretofore, is divided into several chapters, and the various preparations, pharmaceutical as well as chemical, are conveniently grouped together into syllabi, thus showing their most important relations to, and their striking differences from each other at a glance. One of the most acceptable features of the work, through its various editions, has been the generalization of facts, whether scientific or elaborated merely for convenience of study, and the grouping together, under such general headings, of the chemical and pharmaceutical preparations used in, or merely of interest to pharmacy and medicine. This plan has been adhered to in the edition before us, which will be found of equal usefulness as the preceding ones.

Several chapters of the work have been almost entirely rewritten, and the entire book gives evidence of the care bestowed upon its revision. The recent pharmaceutical literature and the new Pharmacopœia have received due attention, although a few changes in the latter have escaped the editor's notice, as, for instance, the sources of Levant wormseed, which is erroneously given on pages 412 and 437; and of gamboge, on page 425, which is not in accordance with the results of Daniel Hanbury's researches and the facts accepted by all recent pharmacopœias.

We should have preferred, in this as well as in the previous edition, to see the working formulas of the Pharmacopœia not merely mentioned, but likewise briefly commented upon, and the short criticism on page 753, of which we approve, we consider of sufficient weight to have warranted the omission of nearly all the preparations of the so-called eclectic school. We miss, on pages

476 and 512, the researches of Chas. Bullock concerning the alkaloids of *Veratrum viride*; *aconella* and *pseudaconitia* are not mentioned among the acetonite alkaloids (p. 474), nor the different species of *Eucalyptus*, on p. 411, as yielding volatile oil. On page 516 the old term propylamina is still used, instead of the correct one of trimethylamina, and on p. 528 Fumouze's process, based upon that of Procter, for the preparation of cantharidin, has been omitted.

The usefulness of the work is well expressed in the words of Prof. Procter, when reviewing its third edition, in 1864: "The work is well adapted to the wants of the classes for whom it is written, by simplicity of arrangement and great absence of technicality, except in those divisions where it is necessary to express tersely much information by means of formulas."

Jahresbericht über die Fortschritte der Pharmacognosie und Toxicologie. Von Dr. Wiggers, Prof. in Goettingen, und Dr. A. Husemann, Prof. in Chur. 7 Jahrgang, 1872. Goettingen: Vandenhoeck & Ruprecht, 1873. 8vo, pp. 660.

Annual report on the progress of pharmacognosy, pharmacy and toxicology. For the year 1872.

This well-known repository of investigations and discoveries in the branches named, sustains the reputation which it has acquired during a period of thirty-two years, twenty-five of which it was issued in connection with Canstatt's annual report on the progress of medicine and the allied sciences. The pharmaceutical literature of most countries is carefully studied, and the results are always given in a comprehensive and at the same time very instructive manner.

Medical and Pharmaceutical Notes. By Edward R. Squibb, M. D., and Edward H. Squibb. 8vo, pp. 66.

A reprint from the Proceedings of the American Pharmaceutical Association for 1873. Although disguised by the appellation "Notes," the reader will find that the papers here published in pamphlet form are a great deal more than mere "notes," but give us in the few pages the results of many hours of patient and accurate observation. Though some of the details may be regarded by some as superfluous, yet their instructive character is such as to make them always not merely acceptable, but really welcome. The papers republished are entitled: On the preservation of hypodermic solutions; on ergot and its preparations; on rhubarb; on buying alcohol and distilled spirits; on a general apparatus stand, upright condenser, pinchcock and burette stand. The pamphlet is embellished with a number of excellent woodcuts.

Annual Report of the Supervising Surgeon of the Marine Hospital Service of the U. S. for the Fiscal Year 1873. Washington: Government Printing Office, 1873. 8vo, pp. 154.

The statistical and other information contained in this report does credit alike to the Marine Hospital Service and to the compiler and digester, Dr. J. M. Woodworth. The report proper is followed by an appendix of nearly 100

pages, containing special medical and surgical reports, by Dr. J. M. Toner, Dr. J. M. Woodworth, and other surgeons of the Marine Hospital Service.

Contributions to the Study of Yellow Fever. Washington, 1874. 8vo, 51 pages.

A reprint from the annual report noticed before, and containing a paper by Dr. J. M. Toner, entitled *The Distribution and Natural History of Yellow Fever in the United States*; with chart showing elevations of localities where it has appeared from A. D. 1668 to A. D. 1874; also a paper by Dr. J. M. Woodworth, entitled *The Yellow Fever Epidemic of 1873*; Reports from Medical Officers U. S. Marine Hospital Service, with Notes by the Supervising Surgeon.

Dictionary of Elevations and Climatic Register of the United States; containing, in addition to elevations, the latitude, mean annual temperature, and the total annual rainfall of many localities; with a brief introduction on the orographic and other physical peculiarities. By J. M. Toner, M. D. New York: D. Van Nostrand, 1874. 8vo, pp. 130. Price, \$3 in paper, \$3.75 in cloth.

When it is considered how completely altitude, in every part of the world, controls the natural productions of a region, and modifies or limits the types and species of animals and plants that exist and thrive there, it will not be thought strange that elevation should powerfully affect the health, vigor, habits, pursuits, and longevity of man. The student of social science, in fact, every intelligent person, is therefore no less interested in this work than the physician, for whom, as the author tells us, the work of compilation has been undertaken, chiefly for the purpose of placing within the reach of the medical profession a record that may enable and induce professional men, in different localities of the United States, to observe, record and contrast the influence of elevation, if it has any, on health and disease.

Among the places enumerated in the dictionary, we observe quite a number located beyond the limits of the United States, in Mexico, Guatemala, Canada, and even Europe. The introductory part abounds in valuable facts and suggestive ideas in relation to the influence of altitude, and deduced from all periods of history and all sections of the globe. The data referring to the percentage of deaths and the prevalence of pulmonary and other diseases are particularly interesting, and should excite to extended observations, and to the collection of statistics in all parts of the country.

Discours sur les réactions chimiques de la Picrotoxine dans la Bière. Par H. Bonnewyn, pharmacien à Ixelles. Bruxelles: H. Manceaux, 1874. 8vo, 16 pages.

A discourse on the chemical reactions of picrotoxin in beer.

A former paper on the same subject was noticed on page 384 of this journal for 1871. Mr. Depaire has objected to the sulphuric acid test for picrotoxin, proposed by the author, on the ground that a similar yellow color is produced

by some of the extractive matter contained in beer. The author admits that ether, on account of the water it contains or dissolves, will take up from the extract of beer some extractive along with the poisonous substance in question; but the latter may afterwards be obtained, free from these compounds, if the ethereal extract is treated with chloroform, in which picrotoxin is perfectly soluble.

Synopsis of the Flora of Colorado. By Thomas C. Porter and John M. Coulter. Washington: Government Printing Office, 1874. 8vo, pp. 180.

This is one of the "miscellaneous publications" from the U. S. geological and geographical survey of the territories, Department of the Interior, and possesses great value for the student of botany. The collections of various explorers, made since 1861, were placed at the disposal of the authors, both of whom have spent some months in the territory. Not only all the survey, but science, is indebted to Professor Porter for his share in the work, occupying several months in its preparation without compensation from the Government.

Public Ledger Almanacs for the Years 1870—1873. Philadelphia: Geo. W. Childs.

The four almanacs, some of which we have noticed before, are here presented in a reprint, forming a neat little volume of 233 pages, which is filled with interesting information.

The following pamphlets have been received:

Thirty-first Annual Report of the Managers of the State Lunatic Asylum, Utica, N. Y., for the Year 1873. Transmitted to the Legislature January 8, 1874.

Forty-eighth Annual Report of the Massachusetts Charitable Eye and Ear Infirmary. 1874.

OBITUARY.

J. PARKER MILBURN died in Washington, D. C., March 4th, after a brief illness, of pneumonia. Born in Alexandria, Va., July 20th, 1835, he was educated in his native city, and commenced his pharmaceutical career under the instruction of his brother J. A. Milburn. In 1855 he removed to Washington, where he entered into business in 1857. Well educated, honorable in his dealings, industrious and persevering, he soon won for himself the confidence of the community. He was one of the most active members of the Columbia Pharmaceutical Association and of the National College of Pharmacy.

FRANCIS E. SUIRE senior member of the firm F. E. Saire & Co., Cincinnati, died there April 13th. The deceased had been long a sufferer, so that his death was not unexpected. He had been for many years in business in Cincinnati, and was honored and esteemed as a pharmacist and as a man.

JAMES S. ASPINWALL, formerly a prominent druggist in New York, died April 23d, at Douglastown, L. I., in his 67th year; he had been a member of the American Pharmaceutical Association since 1855, and served as its treasurer in 1856-57.

HENRY DEANE, F.L.S., died suddenly at Dover, April 4th, in the 67th year of his age, while on his way to visit his son in Hungary. He was born at Stratford, near London, on the 11th of August, 1807. At the age of eighteen he was apprenticed, for three years, to Joseph Fardon, at Reading, and afterwards became an assistant at John Bell & Co.'s, and attended then a course of lectures, at the Royal Institution, by Faraday and Brande. In 1837 he commenced business at Clapham, and on the formation of the Pharmaceutical Society, in 1841, became one of its first members. He became one of the Board of Examiners in 1844, and in 1851 was elected a member of the Council, with which he was connected for nearly twenty years, serving as vice-president from 1851 to 1853, and as president for the two years following. During this time the publication of a national pharmacopœia assumed a more definite shape, and Mr. Deane acted as chairman of the committee appointed by the Pharmaceutical Society until the Medical Council was formed for the purpose indicated.

In 1840 the Microscopical Society was formed, and Mr. Deane joined it on the foundation. The observations to which he was induced thereby led to a friendly intercourse with many of the most talented scientists of Great Britain.

At the formation of the British Pharmaceutical Conference, in 1863, he was elected President, and this position, as well as every other which he occupied, he filled to the satisfaction of all.

He possessed by nature an inherent love of science, and in youth and manhood improved every opportunity of acquiring sound scientific knowledge, thus making up for any deficiencies he might have had in consequence of inability to attend higher schools earlier in life. Simple in his habits, indomitable in pursuit of knowledge, thoroughly practical in matters of business, too high-minded to stoop to anything mean or dishonorable, Mr. Deane was possessed of that sound, practical sense which teaches that a man should never shirk his duty, that it would never be the duty of a man to perform a dishonorable act, and that consequently there is never any excuse for neglecting duty; his motto was: "There is nothing beneath the dignity of a man that is not dishonorable."

His professional attainments and moral worth were well known throughout England, and recognized in this country; the American Pharmaceutical Association and most of the local pharmaceutical societies in this country have placed his name upon their roll of honor, and in him lose one of their own members.

The remains of the deceased were interred in the village of Cheriton, near Shornecliffe, many friends, and officers and members of the different societies paying their last tribute of respect by being present at the funeral.